

Appendix 7

Swimming Pool Disinfection - Recommended Levels

Chemical

Sodium Hypochlorite & Calcium Hypochlorite

Free Chlorine	1 mg/l or below (to an absolute minimum of 0.5 mg/l. This assumes a pH value of 7.2 and satisfactory microbiological monitoring results)
	Free chlorine levels above 3mg/l should not be necessary in any pool using hypochlorite.
Combined Chlorine	Should be less than half the free chlorine and no more than 1mg/l, no matter what the level of free chlorine.
pH Value	7.2 – 7.4 should be the target when using chlorine-based disinfectants.

Chlorinated Isocyanurates

Free Chlorine	3– 5.0 mg/l
pH Value	7.2 – 7.4 (the lower the pH the better the disinfection)
Cyanuric Acid Levels	These should be tested once a week until levels are consistent when this can be increased to monthly. Recommended levels no more than 150mg/l.

Please note: Adding 60 mg/l of Cyanuric Acid to an outdoor pool using hypochlorite at the start of the season will help to stabilise your free chlorine levels, especially when there is strong sunlight.

Bromochloro-dimethylhydantoin (BCDMH)

Total Bromine	4.0 – 6.0mg/l
pH Levels	7.2 – 7.8

It is important that these levels are strictly adhered to as bathers exposed to this chemical can suffer skin irritation and rashes.

Sodium Bromide Plus Hypochlorite

Total Bromine	1.5 3.5mg/l
pH Value	7.8 – 8.2
Total Alkalinity	100mg/l

Alkalinity

Acceptable Range	80 – 200 mg/l
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Correct alkalinity ensures effective coagulation and a stable pH when using acidic disinfectants. Alkalinity should be measured weekly using alkalinity test tablets.

Total Dissolved Solids (TDS)

This is the sum of the weight of soluble material in the pool. TDS levels increase with addition of pool chemicals, bather pollution etc. The pool water is compared with your source water (e.g. mains) using an electronic meter. TDS should not be allowed to increase more than your source water by 1000mg/l. Dilution by replacing up to 30 litres of water per bather per day should help keep TDS to an acceptable level.

Calcium Hardness

This is the measure of the calcium salts in the water. Recommended levels are between 80 - 200 mg/l; below this figure, the water can be corrosive to the fabric of the pool plant, above can lead to scale deposits. It should be checked weekly using appropriate tablets.

Microbiological Levels

Satisfactory Levels

Colony Count (37oC)	No more than 10 cfu/ml
Total Coliforms	Absent in 100ml
Escherichia coli	Absent in 100ml
Pseudomonas aeruginosa	Absent in 100ml for all spas and whirlpools